

ALIGNMENT MARKS FOR TAPE HEAD POSITIONING

ABSTRACT

5 A device for precision alignment of a write element of a tape head to a
transport direction of a media that is transported across the tape head is disclosed.
The tape head includes at least one alignment element that is cofabricated with the
write element so that both the write element and the alignment element have a fixed
orientation with respect to a magnetic axis of the tape head. The alignment element
10 and the write element can be fabricated on the tape head using standard
microelectronic photolithographic processes. Preferably, the tape head includes a
plurality of alignment elements. Those alignment elements are operative to write
alignment transitions onto the media. The alignment transitions can be observed to
determine if they are indicative of the write element having a predetermined
15 orientation with respect to the transport direction. A read transducer can be used to
generate signals from the alignment transitions and those signals can be analyzed
to determine if the predetermined orientation of the write element has been
achieved. The tape head can include horizontal and/or vertical elements for a gross
visual alignment of the tape head to the media. The alignment transitions can be
20 read by a data element of a separate data head. A signal from the data element can
be used to adjust the azimuth of the data head with respect to a direction of
transport. In servo writer applications where servo code is prerecorded on the
media, the alignment transitions can be used to align the write elements of a servo
write head to the transport direction of the media so that inter band skew between
25 adjacent servo bands is significantly reduced.